

ABSTRACT

A hydrocarbon adsorbent that includes a zeolite with either a H-FER structure or a MOR structure in which the pore diameter has been adjusted by ion exchange. A propane adsorbent that includes a zeolite with a MFI structure. A hydrocarbon removal unit that includes a TSA pre-purification unit having a column packed with sequential layers of activated alumina, a NaX zeolite, and the hydrocarbon adsorbent. A method of reducing the hydrocarbon content within liquid oxygen inside a cryogenic air separation unit that includes purifying feed air with the above pre-purification unit.